IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Jerry Z. Shan, et al.	§	Confirmation No.	3123
Serial No.: 10/698,736	§	Group Art Unit:	2863
Filed: 10/31/2003	§	Examiner:	Kundu, Sujoy K.
For: Techniques for Monitoring a Data Stream	§	Atty Docket:	200208138-1 HPQB:0077

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APPEAL BRIEF PURSUANT TO 37 C.F.R. §§ 41.31 AND 41.37

This Appeal Brief is being filed in response to the Final Office Action mailed on January 21, 2009, and in furtherance of a Notice of Appeal filed April 20, 2009.

1. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

2. RELATED APPEALS AND INTERFERENCES

The Appellants are unaware of any other appeals or interferences related to this Appeal. The undersigned is the Appellants' legal representative in this Appeal.

3. STATUS OF CLAIMS

Claims 1-30 are currently pending, are currently under rejection and, thus, are the subject of this appeal.

4. STATUS OF AMENDMENTS

There are no outstanding amendments to be considered by the Board.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The Application generally relates to programmatic detectors. A sensitivity parameter having a threshold value is determined for programmatic detectors to detect the occurrence of an event, such as change. *See, e.g.*, Application, page 6, line 1 – page 7, line 20. The Application contains five independent claims, namely, claims 1, 15, 22, 25, and 27, all of which are the subject of this Appeal. Their subject matter is summarized below. The subject matter of dependent claim 2 is also summarized.

Independent claim 1 recites a processor-based method (e.g., Figure 3 via processor 32) including: receiving a data stream (e.g., data stream 12) having a plurality of

temporally ordered data points; generating (e.g., block 44 of Figure 3) a plurality of sequences (e.g., sequences 24) from a first portion of the data stream; and training (e.g., via training window 16 and trainer 20) a detector (e.g., detector 22) by determining (e.g., blocks 48, 52, 56) a value for a sensitivity parameter (e.g., parameter 26 having a threshold 36) using the plurality of sequences. *See, e.g.*, Application, page 8, line 8 – page 9, line 11; page 11, line 16 – page 12, line 24; page 13, line 14 – page 22, line 21; Figures 1-3.

Independent claim 15 recites a processor-based method (e.g., Figures 3 and 6 via processor 32) including: training (e.g., via training window 16 and trainer 20) a detector (e.g., detector 22) using a plurality of sequences (e.g., sequences 24) generated (e.g., block 44 of Figure 3) from a first portion of a data stream (e.g., data stream 12), wherein the detector is configured to detect (e.g., comparison block 50 of score 60 versus parameter 26 having a threshold 36) an interesting event in the data stream; and testing (e.g., via testing window 18) a second portion of the data stream using the trained detector. *See, e.g.*, Application, page 8, line 8 – page 9, line 11; page 11, line 16 – page 12, line 24; page 13, line 14 – page 22, line 21; page 25, lines 7-18; Figures 1-3 and 6.

Independent claim 22 recites a system (e.g., Figure 1) including: a trainer (e.g., trainer 20) configured to generate (e.g., block 44 of Figure 3) a plurality of sequences (e.g., sequences 24) from a first portion of a data stream (e.g., data stream 12 in training window 16) and further configured to determine (e.g., via training window 16 and blocks 48, 52, 56) one or more sensitivity parameters (e.g., parameter 26 having a threshold 36) based on the sequences; and a detector (e.g., detector 22) configured to detect (e.g., in testing window 18) an interesting event in the data stream using the one or more sensitivity parameters. *See, e.g.*, Application, page 8, line 8 – page 9, line 11; page 11, line 16 – page 12, line 24; page 13, line 14 – page 22, line 21; page 25, lines 7-18; Figures 1-3 and 6.

Independent claim 25 recites a computer-readable medium having computer instructions for: generating (e.g., block 44 of Figure 3) a plurality of sequences (e.g., sequences 24) from a first portion of a data stream (e.g., data stream 12 in training window

16); determining (e.g., via training window 16 and blocks 48, 52, 56) a sensitivity parameter (e.g., parameter 26 having a threshold 36) using the plurality of sequences; and training (e.g., via trainer 20) a detector (e.g., detector 22) to detect (e.g., in testing window 18) an interesting event (e.g., a change) in the data stream using the sensitivity parameter. *See, e.g.*, Application, page 8, line 8 – page 9, line 11; page 11, line 16 – page 12, line 24; page 13, line 14 – page 22, line 21; page 25, lines 7-18; page 38, lines 8-24; Figures 1-3 and 6.

Independent claim 27 recites a system (e.g., Figure 1) including: means (e.g., processor 32, block 44 of Figure 3) for generating a plurality of sequences from a first portion of a data stream (e.g., data stream 12 in training window 16); means (e.g., processor 32, training window 16, trainer 20) for determining a sensitivity parameter (e.g., parameter 26 having a threshold 36) based on the plurality of sequences; and means (e.g., programmed detector 22) for detecting an interesting event in a second portion (e.g., in testing window 18) of the data stream using the sensitivity parameter. *See, e.g.*, Application, page 8, line 8 – page 9, line 11; page 11, line 16 – page 12, line 24; page 13, line 14 – page 22, line 21; page 25, lines 7-18; Figures 1-3 and 6.

Dependent claim 2 recites the method of claim 1, further including running the detector (e.g., programmed detector 22) on a second portion of the data stream (e.g., data stream 12). *See, e.g.*, Application, page 13, line 14 – page 14, line 12.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. First Ground of Rejection for Review on Appeal

The Appellants respectfully urge the Board to review and reverse the Examiner's first ground of rejection in which the Examiner rejected claim 1 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

B. Second Ground of Rejection for Review on Appeal

The Appellants respectfully urge the Board to review and reverse the Examiner's second ground of rejection in which the Examiner rejected claims 1-14 under 35 U.S.C. § 101 as allegedly directed to non-statutory matter.

C. Third Ground of Rejection for Review on Appeal

The Appellants respectfully urge the Board to review and reverse the Examiner's third ground of rejection in which the Examiner rejected claims 1-12, 14-23, and 25-30 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Publication No. 2003/0009399 by Boerner et al., (hereinafter "Boerner").

D. Fourth Ground of Rejection for Review on Appeal

The Appellants respectfully urge the Board to review and reverse the Examiner's fourth ground of rejection in which the Examiner rejected claims 13 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Boerner in view of U.S. Patent No. 5734592 by Cox et al., (hereinafter "Cox").

7. ARGUMENT

As discussed in detail below, the Examiner has improperly rejected the pending claims. Further, the Examiner has misapplied long-standing and binding legal precedents and principles in rejecting the claims under 35 U.S.C. §§ 101, 102(b), 103(a), and 112. Accordingly, the Appellants respectfully request full and favorable consideration by the Board, as the Appellants assert that claims 1-30 are currently in condition for allowance.

A. Ground of Rejection No. 1

As listed above, the Examiner rejected claim 1 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The Appellants respectfully traverse this rejection.

Legal Precedent

In reviewing a claim for compliance with 35 U.S.C. § 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. § 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent. *See Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 U.S.P.Q.2d 1279, 1283 (Fed. Cir. 2000). Only when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction must a court declare it indefinite. *See Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1366, 71 U.S.P.Q.2d 1081, 1089 (Fed. Cir. 2004); *but see Ex parte Miyazaki*, 89 U.S.P.Q.2d 1207 (B.P.A.I. 2008) (holding that a claim *in a pending patent application* is indefinite under 35 U.S.C. § 112, second paragraph, if the claim is amenable to two or more plausible claim constructions).

Deficiencies of the Rejection

In contending that claim 1 is indefinite, the Examiner pointed to the recited element of "training a detector by determining a value for a sensitivity parameter using the plurality of sequences." Final Office Action, page 2. The Examiner stated that "Applicant fails to describe the purpose or use of determining a value in the claim." *Id.* However, in view of the legal precedent set forth above, the Appellants are unable to ascertain as to what grounds the Examiner believes this rejection is proper under 35 U.S.C. § 112, second paragraph. For example, the Examiner did not assert that the recited phrase is insolubly ambiguous or amenable to multiple plausible meanings.

Nevertheless, with regard to the determined value of the sensitivity parameter, the claim plainly sets forth that the sensitivity parameter is used to *train a detector*. Further, as acknowledged by the Examiner in the Office Action mailed December 18, 2007, "training a detector" constitutes setting the detector to detect. Undeniably, the purpose of determining the sensitivity parameter (and its value) is clear and neither insolubly ambiguous nor subject to multiple plausible meanings. Indeed, given the plain language of

claim 1, especially in view of the specification and the general knowledge in the relevant art, one skilled in the art will readily appreciate that the use of the sensitivity parameter and its value is to train a detector to detect an event based upon the determined value of the sensitivity parameter.

The Appellants respectfully assert that claim 1 is fully compliant with 35 U.S.C. § 112, second paragraph. Accordingly, Appellants respectfully request the Board reverse the instant rejection of claim 1.

B. Ground of Rejection No. 2

The Examiner rejected claims 1-14 under 35 U.S.C. § 101 as directed to non-statutory matter. The Appellants respectfully traverse this rejection.

In formulating the instant rejection, the Examiner stated that pursuant to M.P.E.P. § 2106, "the claims must have either physical transformation and/or a useful, concrete and tangible result." Final Office Action, page 2; *but see In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (en banc) (stating that the "useful, concrete and tangible result test . . . is insufficient to determine whether a claim is patent-eligible under § 101"). The Examiner then asserted that the present claims "fail to include transformation from one physical state to another," and that "[a]lthough the claims appear useful and concrete, there does not appear to be a tangible result claimed." Final Office Action, pages 2. The Examiner concluded erroneously that the subject matter of claims 1-14 is not patent eligible because:

> [m]erely determining a value for a sensitivity parameter using the plurality of sequences would not appear to be sufficient to constitute a tangible result, since the outcome . . . has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized.

See id. at pages 2 and 3.

To the contrary, the Appellants stress that the Examiner has failed to fully appreciate and consider all of the recited language of independent method claim 1, as well as the extensive disclosures in the specification. First, the useful and tangible result/application of "training a detector" by determining a value for a sensitivity parameter is presented clearly in the plain language of claim 1, as well in the specification. Second, the present specification teaches various exemplary applications utilizing a trained detector having a sensitivity parameter, and also teaches detailed embodiments of determining values for the recited sensitivity parameter and implementing associated testing. *See, e.g.*, Application, page 6, line 1 – page 9, line 4; page 19, line 8 – page 23, line 4; page 24, line 12 – page 25, line 5; page 25, line 20 – page 27, line 24; page 36, line 11 – page 37, line 17; Figures 1-10.

Further, Appellants emphasize that the recited processor-based method of claim 1 (and its dependent claims 2-14) satisfies at least the patentability test clarified recently by the Federal Circuit. *See In re Bilski* at 943 (explaining that subject matter is patentable under 35 U.S.C. § 101 if "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.") (emphasis in original); *see also* Final Office Action, pages 7 and 8 (acknowledging in the "Response to Arguments" section the *In re Bilski* test). The Appellants respectfully submit that claim 1 satisfies both options of the *Bilski* test.

With regard to the first option, the method of independent claim 1 (and its dependent claims 2-14) is clearly *tied* a *machine* such as a processor (and a detector). *See, e.g.*, Application, page 16, lines 5-14. Indeed, the preamble of claim 1 limits the method to a *processor-based* method. *See, e.g.*, *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989); *Pac-Tec Inc. v. Amerace Corp.*, 903 F.2d 796, 801, 14 USPQ2d 1871, 1876 (Fed. Cir. 1990) (determining that preamble language that constitutes a structural limitation is actually part of the claimed invention). In addition, the skilled artisan, in view of the present specification and the plain language of the body of the claims, would understand that the present method claims

are tied to a processor (i.e., a machine or apparatus). To be sure, one of ordinary skill in the art would recognize that the method claims rely on a machine (e.g., a processor including a central processing unit, microprocessor, computer, server, programmable logic controller, chip, etc.) to implement the recited features of the method claims. With regard to the second option of the *Bilski* test, the recited detector, however integrated with the processor, is *transformed* to a different state or thing upon becoming trained, i.e., the detector becomes a trained programmed detector.

For at least these reasons, the recited features of the present method claims are directed to statutory subject matter. Therefore, the Appellants respectfully request the Board to reverse the rejection of claims 1-14 under 35 U.S.C. § 101.

C. Ground of Rejection No. 3

The Examiner rejected claims 1-12, 14-23, and 25-30 under 35 U.S.C. 102(b) as being anticipated by Boerner. The Appellants respectfully traverse this rejection.

Legal Precedent

Anticipation under 35 U.S.C. § 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). A single reference must teach each and every limitation of the rejected claim. *Atlas Powder v. E.I. duPont de Nemours & Co.*, 750 F.2d 1569, 224 U.S.P.Q. 409 (Fed. Cir. 1984). Indeed, the prior art reference must show the *identical* invention "in as complete detail as contained in the ... claim." *Richardson* v. *Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Deficiencies of the Rejection – All Independent Claims

The Examiner contended incorrectly that Boerner in paragraph 34 teaches *generating* a *plurality of sequences from a first portion of a data stream*, as generally recited in all of the present independent claims (claims 1, 15, 22, 25, and 27). *See* Final

Office Action, page 8. However, as discussed below, no such teaching exists in Boerner including paragraph 34.

As explained in paragraph 34, Boerner discloses a technique for analyzing a plurality of "time series data sets" in order to identify a particular data set to be further analyzed. In particular, Boerner discloses that regression techniques may be applied to a time series data set (to the last 30 data points in the set) to calculate a slope of a fitted line (through the last 30 data points). *See* Boerner, ¶ 34. Thereafter, based on the slope value calculated for each times series data set, a particular data set may be selected for further analysis. *See id.* For instance, Boerner teaches that time series data sets with large slope values are ideal candidates for further analysis. *See id.* Again, after review of the Boerner passages cited by the Examiner, as well as the entire Boerner reference, the Appellants stress that Boerner does not disclose generating a plurality of sequences from a first portion of a data stream, as presently claimed.

In a limited explanation, the Examiner stated that a "*plurality of time series data sets* [as disclosed in Boerner] can be broadly interpreted as a *plurality of sequences.*" *See* Final Office Action, page 8 (emphasis added). To the contrary, the broadest reasonable interpretation of "generating a plurality of sequences" does *not* read on the Boerner time series data sets, especially in view of: (1) the plain language of the claims; (2) the claims as a whole; (3) the present specification; and (4) the interpretation the skilled artisan would reach. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321 (Fed. Cir. 2005) (explaining that during patent examination, the pending claims are to be given their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art.") (quoting *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004)); *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999) (directing that the broadest reasonable interpretation of the claims must be consistent with the interpretation that those skilled in the art would reach). While claim limitations should not be imported from the specification, the claims must be interpreted both consistent with and in light of the specification, as well consistent

with the skilled artisan's interpretation, whether the claims are in an issued patent or are pending in a patent application.

As appreciated by the skilled artisan, a time series data set as taught by Boerner is merely data points in successive order collected at intervals over a period of time, usually in uniform intervals. The time series data set is the data itself and not a sequence generated or modeled separate from the data. In contrast, as consistently held and explained throughout the present specification, the recited plurality of sequences (e.g., multiple statistical distributions) are *generated* (e.g., modeled) from a first portion of data and are *distinct* from the data. Such an understanding would be fully appreciated by those skilled in the art.

Furthermore, it should be noted the last 30 data points of a Boerner data set, or the regression-fitted line or a slope of the line, does not lead to a plurality of generated sequences, as claimed. Boerner, as noted, simply calculates a slope for the last 30 data points based upon a fitted line determined by a regression technique. The Appellants respectfully submit that one skilled in the art would not reasonably view a regression-fitted line or a slope of that line as a "sequence." Under any reasonable interpretation of the Examiner's limited analysis or of the Boerner reference, Boerner does not disclose generating a plurality of sequences from a first portion of a data stream, as generally recited in all of the present independent claims. Undeniably, the Boerner time series data sets do not read on the recited plurality of sequences.

Lastly, it should be noted that even if a time series data set could be broadly equated with a generated sequence, as claimed (which the Appellants do not concede), Boerner does not teach that its plurality of time series data sets originate from a *first portion of a data stream*, or even from the same data stream. To be sure, such a disclosure is not inherent (i.e., necessarily present) in Boerner. The Examiner apparently ignored that the recited plurality of sequences are generated *from a first portion of a single data stream*.

The recited: (1) plurality of sequences and (2) first portion of a data stream are both requirements of the claims.

For at least these reasons, Boerner cannot anticipate independent claims 1, 15, 22, 25, and 27. Accordingly, dependent claims 2-12, 14, 16-21, 23, 25, 26, and 28-30, are also allowable over Boerner. The Appellants respectfully request the Board to reverse the rejection of claims 1-12, 14-23, and 25-30 under 35 U.S.C. § 102 (b).

Deficiencies of the Rejection – Independent Claims 1, 22, 25, 27

Further, independent claims 1, 22, 25, and 27 generally recite determining a *sensitivity parameter* based on the plurality of sequences. In other words, each of independent claims 1, 22, 25, and 27 require that the plurality of sequences (e.g., generated from a first portion of a data stream, as discussed above) be used to determine a sensitivity parameter. The Appellants respectfully submit that Boerner also fails to teach or suggest this feature. In setting forth the present rejection, the Examiner cited Figure 1 and paragraph 18 of Boerner as disclosing the determination of a sensitivity parameter based upon a plurality of sequences generated from a first portion of a data stream. With regard to paragraph 18, the Appellants note that this paragraph states:

> [0018] One of the outputs of this process is a set of normalized deviations from the dynamic trend. This time series oscillates between positive and negative values and could be used with *thresholds* as a trading indicator.

Boerner, ¶ 18 (emphasis added).

After reviewing this passage, it appears that the Examiner may have intended for the disclosed "thresholds" to constitute the recited "sensitivity parameters." However, even if such a correlation is proper, the Appellants submit that the present claims not only require the determination of a "sensitivity parameter," but also require that the sensitivity parameter is determined using the plurality of sequences as discussed above. With this in mind, the Appellants are unable to locate any teaching in the cited passage or elsewhere that the "thresholds" are determined based on a *plurality of sequences*, as recited by claims

1, 15, 22, and 27. Indeed, the Appellants note that this single cited passage is provided in the "Summary of the Invention" section of Boerner and is the *only* passage in the reference which even mentions the use of thresholds. Further, as discussed above, any reasonable interpretation of Boerner does not teach the generation of a plurality of sequences using a first portion of a data stream, as recited by the independent claims. Thus, the Appellants are unable to ascertain as to how the Examiner has interpreted the reference to conclude that the "thresholds" briefly mentioned in paragraph 18 are generated from a plurality of sequences.

Moreover, as noted, the Examiner further cited Figure 1 of Boerner in support of the rejection. However, based on the Examiner's failure to provide any sort of explanation in the Final Office Action, it is unclear as to what precise elements in Figure 1 the Examiner believes discloses sensitivity parameters. After reviewing the cited figure, the Appellants note that Figure 1 appears to mention the use of "trend determination parameters." However, after reviewing the reference, it does not appear that the disclosed trend determination parameters are derived or determined from a plurality of sequences generated from a first portion of a data stream. As discussed, the passages cited by the Examiner in the present rejection fail to even disclose the generation of a plurality of sequences. Boerner can reasonably be interpreted as teaching the determination of *sensitivity parameters using a plurality of sequences generated from a first portion of a data* stream, as recited by independent claims 1, 22, 25, and 27.

For these additional reasons, Boerne does not anticipate independent claims 1, 22, 25, and 27, or their dependent claims. Therefore, the Appellants respectfully request the Board reverse the rejection of these claims under 35 U.S.C. § 102 (b).

Deficiencies of the Rejection – Independent Claim 15 and Dependent Claim 2

Lastly, independent claim 15 recites "testing a second portion of the data stream using the trained detector." Similarly, dependent claim 2 recites "running the detector on a second portion of the data stream." The Examiner asserted incorrectly that Boerner in

paragraphs 34-36 teaches "running the detector on a second portion of the data stream." *See* Final Office Action, page 4. The Appellants have carefully reviewed paragraphs 34-36 and find no mention or indication of testing a second portion of a data stream with a trained detector. Moreover, the Appellants respectfully submit that Boerner cannot be reasonably construed as disclosing the testing of a second portion of a data stream (or of the above-discussed Boerner time series data sets) using a trained detector. Boerner is devoid of this feature.

For this additional reason, Boerner does not anticipate independent claim 15 and dependent claim 2, or their dependent claims. Therefore, the Appellants respectfully request the Board reverse the rejection of these claims under 35 U.S.C. § 102 (b).

D. Ground of Rejection No. 4

The Examiner rejected claims 13 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Boerner in view of Cox. The Appellants respectfully traverse this rejection. Cox relates to a computer-implemented process for determining a ranked set of solutions to a bipartite graph matching problem. Cox, col. 1, lines 5-10. The Examiner relied on Cox solely for the teaching that cost variables may be used in determining sensitivity parameters. *See* Final Office Action, page 5. However, Cox, whether taken alone or in any sort hypothetical combination with Boerner, does not remedy the deficiencies of Boerner discussed above with regard to the third ground of rejection. Therefore, the Appellants respectfully request that the Board reverse the rejection of claims 13 and 24 under 35 U.S.C. § 103(a).

E. Request for Reversal of the Rejections

In view of the reasons set forth above, the Appellants respectfully request the Board to reverse the rejections of claims 1-30 under 35 U.S.C. § 101, 35 U.S.C. § 112 (second paragraph), 35 U.S.C. § 102(b), and 35 U.S.C. § 103(a).

Conclusion

The Appellants respectfully submit that all pending claims are in condition for allowance. However, if the Examiner or Board wishes to resolve any other issues by way of a telephone conference, the Examiner or Board is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

Date: June 22, 2009

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8. APPENDIX OF CLAIMS ON APPEAL

1. A processor-based method comprising:

receiving a data stream comprising a plurality of temporally ordered data points;

generating a plurality of sequences from a first portion of the data stream; and

training a detector by determining a value for a sensitivity parameter using the plurality of sequences.

2. The method, as set forth in claim 1, comprising running the detector on a second portion of the data stream.

3. The method, as set forth in claim 2, wherein running the detector comprises:

generating a score corresponding to the second portion of the data stream;

comparing the score to the determined value for the sensitivity parameter; and

signaling detection of an interesting event in the data stream if the score crosses the sensitivity parameter.

4. The method, as set forth in claim 1, wherein training the detector by determining the value for the sensitivity parameter comprises selecting the value for the sensitivity parameter based on a target level for an estimated performance characteristic of the detector.

5. The method, as set forth in claim 1, wherein training the detector by determining the value for the sensitivity parameter comprises:

generating a score for each of the plurality of sequences; and

selecting the value for the sensitivity parameter based on the scores.

6. The method, as set forth in claim 1, wherein generating the plurality of sequences comprises:

inferring a statistical distribution of a known type to characterize the first portion of the data stream; and

generating the plurality of sequences from the statistical distribution.

7. The method, as set forth in claim 6, wherein the statistical distribution is a discrete distribution containing data points from the first portion of the data stream, and wherein generating the plurality of sequences from the statistical distribution comprises selecting data points from the discrete distribution.

8. The method, as set forth in claim 6, wherein inferring a known type of distribution comprises determining a set of parameters corresponding to the known type of statistical distribution.

9. The method, as set forth in claim 1, wherein generating the plurality of sequences comprises:

selecting a change based on a distribution of changes; and

generating a changed sequence based on the selected change.

10. The method, as set forth in claim 1, wherein determining the value of the sensitivity parameter comprises determining a plurality of values for the sensitivity parameter using the plurality of sequences.

11. The method, as set forth in claim 10, wherein determining one of the plurality of values for the sensitivity parameter comprises calculating a transformation of a second of the plurality of values for the sensitivity parameter.

12. The method, as set forth in claim 1,

wherein receiving a data stream comprises receiving a plurality of data streams;

wherein generating the sequences comprises generating a respective plurality of sequences from a respective first portion of each of the plurality of data streams; and

wherein determining the sensitivity parameter comprises determining a respective sensitivity parameter for each of the plurality of sequences.

13. The method, as set forth in claim 1, wherein determining the value for the sensitivity parameter comprises determining the value for the sensitivity parameter based at least partially on cost parameters.

14. The method, as set forth in claim 12, comprising raising an alarm when a respective detector signals detection when parameterized by the respective sensitivity parameter and run on a respective second portion of a sufficient set of data streams.

15. A processor-based method comprising:

training a detector using a plurality of sequences generated from a first portion of a data stream, wherein the detector is configured to detect an interesting event in the data stream; and

testing a second portion of the data stream using the trained detector.

16. The method, as set forth in claim 15, comprising transforming the data stream before training the detector.

17. The method, as set forth in claim 15, comprising:

generating a plurality of sequences from a third portion of the data stream; and

retraining the detector using the plurality of sequences generated from the third portion of the data stream.

18. The method, as set forth in claim 15, wherein training the detector comprises determining one or more sensitivity parameters from the plurality of sequences.

19. The method, as set forth in claim 18, wherein testing the second portion of the data stream comprises:

generating a score associated with the second portion of the data stream; and

comparing the score with the one or more sensitivity parameters.

20. The method, as set forth in claim 15, comprising raising an alarm only if an interesting event is detected in the data stream a predetermined number of times within a predetermined amount of time.

21. The method, as set forth in claim 15, comprising raising an alarm if the detector detects an interesting event in the data stream.

22. A system comprising:

a trainer configured to generate a plurality of sequences from a first portion of a data stream and further configured to determine one or more sensitivity parameters based on the sequences; and

a detector configured to detect an interesting event in the data stream using the one or more sensitivity parameters.

23. The system, as set forth in claim 22, comprising an alarm coupled to the detector and configured to engage when an interesting event in the data stream is detected.

24. The system, as set forth in claim 22, comprising an input device coupled to the trainer, wherein the device is configured to allow a user to set cost parameters for use in determining the one or more sensitivity parameters.

25. A computer-readable medium comprising computer instructions for:

generating a plurality of sequences from a first portion of a data stream;

determining a sensitivity parameter using the plurality of sequences; and

training a detector to detect an interesting event in the data stream using the sensitivity parameter.

26. The computer-readable medium, as set forth in claim 25, further comprising computer instructions for:

generating a score corresponding to a second portion of the data stream; and

signaling detection of an interesting event in the data stream if the score crosses the sensitivity parameter.

27. A system comprising:

means for generating a plurality of sequences from a first portion of a data stream;

means for determining a sensitivity parameter based on the plurality of sequences; and

means for detecting an interesting event in a second portion of the data stream using the sensitivity parameter.

28. The system, as set forth in claim 27, wherein means for determining comprises means for generating a plurality of interesting sequences from the data stream, wherein the interesting sequences have a different statistical distribution than a statistical distribution of the first portion of the data stream.

29. The system, as set forth in claim 27, wherein means for detecting comprises means for detecting an interesting event in a parameter of the plurality of distributions.

30. The system, as set forth in claim 27, comprising means for injecting a change into the first portion of the data stream.

9. EVIDENCE APPENDIX

None.

10. RELATED PROCEEDINGS APPENDIX

None.